IN THE CLAIMS

1. (currently amended) A method for production of an integrally asymmetric membrane with at least one separating layer and a supporting layer adjoining the separating layer, comprising the steps:

a) preparation of a spinning solution comprising a membrane-forming polymer and a solvent system;

b) conversion of the spinning solution by means of a forming device into a shaped object with a first and a second surface;

c) bringing of the first or second surface into contact with a precipitant system comprising a polyelectrolyte with negative fixed charges, but no positive fixed charges, wherein the precipitant system is such that formation of a membrane results in having a separating layer on said surface;

said polyelectrolyte with negative fixed charges having a molecular weight of greater than 7000 daltons;

wherein said polyelectrolyte with negative fixed charges is chosen from the group consisting of polyphosphoric acids, polysulfonic acids and polycarboxylic acids;

wherein said polycarboxylic acids are partially cross-linked acrylic acids, copolymers of methacrylic acid and methyl methacrylate, copolymers of acrylic acid and vinylpyrrolidone, or copolymers of acrylic acid, vinylpyrrolidone and lauryl methacrylate; and

d) washing and, if necessary, drying of the membrane.

2. (canceled)

3. (canceled)

4. (previously presented) The method according to Claim 1, characterised in that the polyelectrolyte dissolved in the precipitant system precipitates in contact with the spinning solution.

5. (previously presented) The method according to Claim 1, characterised in that the proportion by weight of the polyelectrolyte with negative fixed charges, relative to the weight of the precipitant system, is 0.01 to 10 wt.%.

6. (previously presented) The method according to Claim 5, characterised in that the proportion by weight of the polyelectrolyte with negative fixed charges, relative to the weight of the precipitant system, is 0.05 to 1 wt.%.

7. (previously presented) The method according to Claim 1, characterised in that in step a) a cellulosic polymer is used as the membrane-forming polymer.

8. (previously presented) The method according to Claim 1, characterised in that in step a) a synthetic polymer is used as the membrane-forming polymer.

9. (previously presented) The method according to Claim 8, characterised in that the synthetic polymer is chosen from the group of polysulfones, polyphenylene sulfones, polyethersulfones, polyaryl ether sulfones, polyimides, polyetherimides, polycarbonates, polyetherketones and polyphenylene sulfides, or from the group of modifications of the cited polymers, or from the group of mixtures of the cited polymers, or from the group of copolymers of the monomers of the cited polymers.

10. (previously presented) The method according to Claim 1, characterised in that in step b) the forming device used is a hollow-fibre die, which converts the spinning solution into a hollow-fibre shaped object with an inner surface as the first surface and an outer surface as the second surface.

11. (previously presented) The method according to Claim 10, characterised in that in step c) the precipitant system is an interior filler that is brought into contact with the inner surface, resulting in the formation of a membrane with a separating layer facing the lumen.

12. (currently amended) An integrally asymmetric membrane with at least one separating layer and a supporting layer, characterised in that a polyelectrolyte with negative fixed charges, but having no positive fixed charges, is physically bound in the separating layer; said polyelectrolyte with negative fixed charges having a molecular weight of greater than 7000 daltons; wherein said polyelectrolyte is chosen from the group consisting of polyphosphoric acids, polysulfonic acids and polycarboxylic acids,

and wherein said polycarboxylic acids are partially cross-linked acrylic acids, copolymers of methacrylic acid and methyl methacrylate, copolymers of acrylic acid and vinylpyrrolidone, or copolymers of acrylic acid, vinylpyrrolidone and lauryl methacrylate; and characterised in that the supporting layer is free from polyelectrolyte.

13. (cancelled)

14. (previously presented) The integrally asymmetric membrane according to Claim 12, characterised in that the membrane is a hollow-fibre membrane with a separating layer facing the lumen.

15. (previously presented) The integrally asymmetric membrane according to Claim 12, wherein the membrane being for separation of proteins.

16. (previously presented) The integrally asymmetric membrane according to Claim 12, wherein the membrane being for chemical modification with an agent that reacts with the polyelectrolyte with negative fixed charges.

17. (previously presented) The method according to claim 1, wherein the spinning solution being comprised of a hydrophobic synthetic polymer selected from the group including polysulfones, polyphenylene sulfones, polyethersulfones, polyaryl ether sulfones, polyimides, polyetherimides, polycarbonates, polyetherketones and polyphenylene sulfides, or from the group of modifications of the cited polymers, or from

the group of mixtures of the cited polymers, or from the group of copolymers of the monomers of the cited polymers, and a hydrophilic polymer chosen from the group of polyvinyl pyrrolidones, polyethylene glycols, polyvinyl alcohols, polyglycol monoesters, polysorbates, including polyoxyethylene sorbitan monooleate, or carbolymethylcellulose.

18. (previously presented) The integrally asymmetric membrane of claim 12, characterized in that the membrane being made from a hydrophobic synthetic polymer selected from the group including polysulfones, polyphenylene sulfones, polyethersulfones, polyaryl ether sulfones, polyimides, polyetherimides, polycarbonates, polyetherketones and polyphenylene sulfides, or from the group of modifications of the cited polymers, or from the group of mixtures of the cited polymers, or from the group of copolymers of the monomers of the cited polymers, and a hydrophilic polymer chosen from the group of polyvinyl pyrrolidones, polyethylene glycols, polyvinyl alcohols, polyglycol monoesters, polysorbates, including polyoxyethylene sorbitan monooleate, or carbolymethylcellulose.